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**FACSIMILE TRANSMITTAL SHEET**

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**DATE:** March 14, 2005

**TO:** Examiner Srirama T. Channavajjala  
**COMPANY:** USPTO  
**FAX NUMBER:** 703-872-9306

**FROM:** Todd A. Sullivan  
**PHONE NUMBER:** 603-668-1400  
**OUR REFERENCE:** NEXT.1000 (U.S. Patent Appln. No. 10/071,731)

**TOTAL NO. OF PAGES,**  
**INCLUDING COVER SHEET:** 5

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☐ URGENT      ☐ FOR REVIEW      ☐ PLEASE COMMENT      ☐ PLEASE REPLY

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**NOTES/COMMENTS:**

Attached: 1. Examiner Interview Agenda (3 pgs)  
2. Neuroeducation Information Sheet (2 pgs)

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FOR DISCUSSION PURPOSES ONLY  
Examiner Interview Agenda  
March 23, 2PM

**Purpose:** The purpose of the scheduled Examiner Interview is to discuss the meaning of claim terms, share a demonstration of the invention, and develop a better understanding of the claimed invention.

**Demonstration:** The Applicant respectfully requests the Examiner have Internet access during the meeting, through which we may provide a demonstration of the invention.

**Terms (all taken from Merriam-Webster's Collegiate Dictionary, 11<sup>th</sup> Ed.):**

- Psychomotor -- of or relating to motor action directly proceeding from mental activity.
- Mental -- of or relating to the total emotional and intellectual response of an individual to external reality.
- Psychology -- the science of mind and behavior.
- Mind -- the element or complex of elements in an individual that feels, perceives, thinks, wills, and esp. reasons; the organized conscious and unconscious adaptive mental activity of an organism.
- Behavior -- the response of an individual, group, or species to its environment.
- Environment -- the circumstances, objects, or conditions by which one is surrounded.
- Neurology -- the scientific study of the nervous system esp. in respect to its structure, functions, and abnormalities.
- Brain -- the portion of the vertebrate central nervous system enclosed in the skull and continuous with the spinal cord ... that is composed of neurons and supporting and nutritive structures (as glia) and that integrates sensory information from inside and outside the body in controlling autonomic function (as heartbeat and respiration), in coordinating and directing correlated motor responses, and in the process of learning.

**First Discussion Topic:** Psychomotor/Psychology/Mind v. Neuromotor/Neurology/Brain.

**Second Discussion Topic:** Page 7 of the office action suggests "Applicant discussed both psychological as well as neurological activities with respect to psychomotor behavior in the disclosure." The office action, in making this point references paragraph 48 of the application. "psycho-, socio-, and neuro-linguistics teach that at the highest level, everybody has the same maps because everybody has the same set of sensory apparatus." Psychomotor activities cannot be discussed comprehensively without mentioning neuroscience and neuromotor activities (which are discussed, although not so labeled in the application). Psychomotor activity is motor activity proceeding from

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mental activity - that is an emotional or intellectual responsive action to an external reality. However, any motor activity requires a nervous system with functionality, such as muscles responding to signals from the brain, which is studied by neurology. Therefore, psychomotor activity cannot be expressed without neuromotor activity

Most activities in which a body engages have a neuromotor element and a psychomotor element (one is not a subset of the other, but they may both be a subset of an activity). Smiling, for instance, requires neuromotor skills. The brain must tell the facial muscles to move in a manner that causes one or both corners of the mouth to rise. Smiling also has a psychomotor element. An individual's feelings, perceptions, and thoughts have an effect on how the individual smiles. If a device were made to only sense when someone was smiling, it would only be sensing a neuromotor activity and it would not teach the Applicant's invention or infringe the Applicant's claim. If a device were made that could sense a person's feelings, perceptions, or will by how that person was smiling (is the person amused, uncomfortable, forcing the smile to appease another person, or trying to mask hostility?), it would be teaching a significant element of the Applicant's invention.

Occasionally, a life form can engage in neuromotor activity without engaging in psychomotor activity. History contains many examples of cadavers sitting up, twitching, etc., and all such activity is the result of either a gas buildup in the cadaver or random electric activity in the nerves (neuromotor system). The dead person is mentally incapable of expressing feelings, perception, or reason, but the nervous system of the corpse is made temporarily active by the electrical current. Similarly, a seizure will result in neuromotor activity without psychomotor activity. A person having a seizure has no mental ability to control or affect their neuromotor activity. A person having a seizure cannot express feelings, perception, or reason during the seizure. A person cannot mentally initiate a seizure (again this is a neural activity, specifically an imbalance within and between nerve cells in the body, as described in the attached "What is Epilepsy").

As a seizure does not have a psychomotor element, it is impossible (based at least on known possibilities) to sense a psychomotor element within a seizure. You cannot sense an emotion or thought of a person during a seizure based on their actions. Understanding this is key to evaluating the Rise reference. Similarly, a seizure is not behavior (a seizure is not a mind-based response to the circumstances, objects, or conditions by which one is surrounded).

Third Discussion Topic: We have some confusion with regards to the following office action items:

- With regards to claim 2 (page 9 of the final office action), if the sensor is not modifying the environmental unit, what part of the invention is? Applicant does not understand how this reference is being applied to the claim. We may simply be confused as to what is being called the environmental unit in Rise.

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- With regards to claim 4, Applicant agrees that data can be stored in the sensor memory, but it is unclear where Rise teaches that "sensed elements" are stored in memory (that is, as the sensor is sensing data, it is storing the data it is sensing).
- With regards to claims 5, 7, 13, and 15, the passages identified do not appear to state that Lamblin teaches using linear algebraic transforms. Some clarification on how these passages suggest linear algebraic transforms is requested.
- With regards to claim 6 (page 10 of the final office action), the office action states, after the seizure alert, "that particular individual attention is focused about a possible behavioral change." We agree, but the Applicant does not understand how this reads on claim 6. Claim 6 is directed toward determining an ordering of an individual's preferences to sense where a person's attention is focused, not to focus a person's attention.
- With regards to claim 8 (page 11 of the final office action), what specifically in col. 5, line 3-47 of Rise is indicative of psychomotor/psychodynamic behavior.

## ***Neurological Information***

### **Neuroeducation Free Information Sheets**

Dementia | Epilepsy | Multiple Sclerosis | Parkinson's Disease | Stroke

#### **Epilepsy**

What is? | Benefits | Causes | Driving | Incidence | Photosensitivity | Seizures | Triggers

#### **What is Epilepsy?**

##### **What happens in the brains of people who have epilepsy?**

To explain this, we need to start by outlining how the brain works. Many people like to think of the brain and how all its nerve cells work as if it was a very complicated computer full of wires and microchips. Others prefer to think of it as a telephone junction box with wires coming in from thousands and thousands of telephones. However, no one could ever build a computer or telephone junction box that was as good as or that could do as much as the human brain.

The brain is made up of thousands of millions of nerve cells called neurons (we could compare them to the wires in the junction box). Neurons are responsible for controlling all the actions and functions of every part of the body - seeing, hearing, talking, walking and even thinking. As with the computers and junction boxes of our analogy, they work by electricity. Tiny electrical signals are sent along the neurons, between the neurons throughout the brain, and then down into the spinal cord where they can be relayed to any of the other nerves in the body. The links between nerve cells are clearly very important so that they can communicate with each other and pass on the signals.

The actual electrical signals or messages are in the form of chemicals called neurotransmitters ('neuro' means to do with nerve cells and 'transmitters' send or communicate signals or messages). There are many different neurotransmitters within the brain. Some work to cause messages to be sent from one nerve cell to another: these are called excitatory neurotransmitters because they excite or stimulate the neurons. Others work to prevent or stop messages being sent: these are called inhibitory neurotransmitters because they inhibit or hold back the signals. Most of the time there is a very close balance between these different types of neurotransmitters.

As with any complicated machine, the brain can sometimes malfunction or develop faults. In epilepsy the fault usually lies in a loss of balance between different neurotransmitters. This can lead to abnormal electrical signals being generated and this electrical activity can progress to a 'seizure'. Seizures take various forms depending upon which areas of the brain are involved. There is more information about seizures in the next two sections of this chapter.

The drugs used to control epilepsy -- called antiepileptic or anticonvulsant drugs -- work by trying to re-establish the correct balance between the different neurotransmitters.

*This information is taken from 'Epilepsy at your fingertips', Chappell & Crawford, £14.99 plus £3.00 p & p in the UK, available from Class Publishing Customer Service Tel: 01752 202301 Fax: 01752 202333.*

*OR simply click here to order immediately through our bookstore now.*

What is Epilepsy?

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